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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,307

06/13/2006

Rolf Brisberger

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EXAMINER

TUROCZY, DAVID P

ART UNIT

PAPER NUMBER

1792

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DELIVERY MODE

02/16/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,307	<b>Applicant(s)</b> BRISBERGER ET AL.	
	<b>Examiner</b> DAVID TUROCY	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendments, filed 1/20/2010, have been fully considered and reviewed by the examiner. The examiner notes the amendment to claims 1. Claims 1-6 are pending in the instant application.

### ***Response to Arguments***

Applicant's arguments filed 1/20/2010 have been fully considered but they are directed at newly amended claim limitations that were not present at the time of the prior rejection and therefore deemed moot and addressed in the prior art rejection below.

The examiner cites here US Patent 5702528, which explicitly discloses constant replenishment of the fluid. Additionally, the reference discloses supplying fluid between a plurality of inductors in a guide channel (see figure 4).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

Art Unit: 1792

possession of the claimed invention. Claims require "whereby the level (h) of the coating metal (2) is determined only by the volume flow (Q)", however the examiner can not locate any support in the original disclosure for such a limitation. Specifically, the height of the molten metal is not disclosed as only determined by the volume flow and therefore this is clearly new matter.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5965210 by Tada et al., hereafter Tada.

Tada discloses Method for hot dip coating a steel strip, in which the strip is passed vertically through a coating tank (7) that holds the molten coating metal and through an upstream guide channel (3) of well-defined defined height (H), wherein an electromagnetic field is generated in the region of the guide channel (4) by means of at least two inductors (2a) installed on either side of the metal strand for the purpose of retaining the coating metal in the coating tank, and wherein a predetermined volume flow (Q) of coating metal is supplied to the guide channel in the region of its vertical extent (H), wherein the predetermined volume flow (Q) of coating metal supplied to the guide channel represents a portion of the replenishment volume of coating metal or the

Art Unit: 1792

entire replenishment volume of coating metal per unit time that is necessary to maintain a desired level (h) of coating metal in the coating tank (see figures, and accompanying text, column 9-11). Tada discloses coating metal supplied between a plurality of inductors on either side of the strip (figure 7). Tada discloses a closed loop control (Figures). Tada discloses a device as claimed and discussed with respect to claim 1 above. Tada discloses the supply line opens into the region of the long side and into the region of the short side of the guide channel. The examiner notes the claims require "region" and it is the examiner position that the device as taught by Tada discloses supply lines opening into the region of the short side of the channel as required by the claim.

Claim 4: Tada discloses the supply line dimension is small relative to the guide channel dimension (figures).

Claim 6: Tada discloses the coating tank is connected to a supply system for coating metal, from which coating metal is conveyed into the supply line or supply lines (see figures, (11)).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1792

7. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada.

Tada discloses all that is taught above and the examiner maintains the position as above with regards to the volume flow; however, Tada fails to explicitly disclose the flow rate is to replace volume of coating, however, such would have been obvious because Tada discloses maintaining a height in the bath and a portion of the molten metal would be removed by coating the substrate.

Additionally, Tada discloses coating metal supplied between a plurality of inductors on either side of the strip (figure 7). At the very least, this modification would have been obvious to one of ordinary skill in the art at the time of the invention because Tada, at figure 7, discloses supplying fluid in an area between the plurality of inductors would lead to predictable results of hot dip coating of a metal strand. Additionally, the mere placement of an inlet is considered a design choice, absent a showing of criticality to the location of the inlet, since it has been held that rearranging parts of an invention only involves routine skill in the art. *In re Japikse*, 86 USPQ 70.

Tada discloses the volume flow (Q) of coating metal that is supplied to the guide channel is supplied under open-loop or closed-loop control (see figures, Column 13).

Tada discloses all that is taught above and the examiner maintains the position as above with regards to the supply lines; however, Tada discloses supplying molten metal into the guide channel uniformly and therefore it would have been obvious to one of ordinary skill in the art to have modified Tada to provide supply lines around the

Art Unit: 1792

strip, including into the region of the short side, to uniformly supply molten metal to the guide channel to reap the benefits of uniform supply.

Alternatively, the prior art discloses uniform supply is a design need for the device, there are finite number of predictable solutions, i.e. locations of supply pipes, and the claim would have been obvious because “a person of ordinary skill has good reason to pursue the known options with his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”

Claim 4-5: Tada discloses the diameter or width of the supply line is small relative to the dimension of the long side (see figures), however, fails to disclose the supply line is no more than 10% of the width of the long side, however, such a modification would have been obvious to one of ordinary skill in the art to provide the appropriate flow of molten metal into the channel and provide a replenishment of the molten metal to provide uniform flow throughout the channel. Additionally, it would have been an obvious matter of design choice to choose the size of the supply line, since such a modification would have involved a mere change in the size of a component. A change of size is generally recognized as being within the ordinary level of skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). Finally, adjusting the uniformity of the solution by adjusting the supply size would have been obvious because “a person of ordinary skill has good reason to pursue the known options with his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”

Art Unit: 1792

Claim 6: Tada discloses the coating tank is connected to a supply system for coating metal, from which coating metal is conveyed into the supply line or supply lines.

8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/027246 by Brisberger et al. in view of Tada in view of US Patent 56702528 by Paramonov.

\*\*\* Please note US Patent Publication 20040241336 is the patent which issued from the national stage application based on WO 03/027246. This patent is being used as an English translation of WO 03/027246, therefore all references to column and line number are found in 20040241336 \*\*\*

Brisberger discloses a method of hot dip coating a metal strand, in which the metal strand passes vertically through a coating tank that holds molten metal and through an upstream guide channel of a well defined height. Brisberger discloses a magnetic seal at the bottom by using two magnets on either side of the strand for the purpose of retaining the coating metal in the tank, wherein a predetermined volume flow of the coating metal is supplied to tank. Brisberger discloses supplying a volume Q from the reservoir tank, which will inherently represent a replenishment of the fluid (entire reference, specifically, figures, 0026, 0053-0059).

Brisberger fails to explicitly disclose the volume Q represents the entire replenishment volume of coating metal per unit time that is necessary to maintain a desired level; however, this would have been obvious to one of ordinary skill in the art



Art Unit: 1792

taking the teaching of Brisberger in its entirety. Brisberger discloses providing a constant coating thickness and the bath height directly relates to the coating thickness. The coating will necessarily deplete the height of the bath because a small portion of the coating material will leave the bath on the substrate and therefore to maintain a constant height one of ordinary skill in the art would have expected predictable results in the modification of providing a constant height by supplying the entire amount of coating material that leaves the bath on the substrate surface. In other words, one of ordinary skill in the art would understand that coating material needs to be supplied to the coating tank in order to maintain a constant height because some material will necessarily be removed by the coating process and one would expect predictable results in maintaining a constant height by supplying the exact amount of molten metal that is leaving the bath on the substrate surface.

Additionally, it is the examiners position that the flow rate of the molten metal into the bath is a recognized known result effective variable, directly effecting the height of material in the coating tank. If flow rate relative to the amount of fluid leaving the bath is too low it would result in a decrease in coating height and too much replacement material would result in an increase in coating height. Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the flow rate used in the process, through routine experimentation, to impart the steel substrate with a constant coating by maintaining the coating bath height constant.

Art Unit: 1792

The requirement of the level of the coating metal is determined only by volume flow ( $q$ ), this is inherent in the discussion above, where the volume flow is adjusted to maintain a constant height.

Brisberger discloses a metal seal, but fails to disclose electromagnetic seal; however, Tada discloses electromagnetic inductors are known to be capable of maintaining the seal at the bottom of a molten bath and therefore modification of Brisberger to use electromagnets would have been obvious to one of ordinary skill in the art to provide predictable and successful results of containing the fluid in the tank because such is explicitly taught by Tada.

As for the requirement of supplying the fluid to the guide channel, the examiner cites here Paramonov. This reference discloses supplying molten metal between inductors in a guide channel is known and suitable in the art (figures). Therefore taking the references collectively, it would have been obvious to one of ordinary skill in the art to have modified Brisberger in view of Tada to supply the molten metal between the inductors with a reasonable expectation of successful results. As for the requirement "for the purpose of retaining coating metal in the coating tank", this is explicitly taught by Paramonov at Column 6, lines 10-20.

At the very least, Brisberger, Tada and Paramonov discloses inductors at the bottom of the tank for retaining coating material in the tank and supplying the molten metal between these inductors would have led to predictable results of supplying coating material into the chamber to replenish the coating material leaving the tank on the steel strip.

Art Unit: 1792

As for the requirement of Claims 2-6, Tada discloses the requirements are known and suitable in the art as discussed above and the selection of these would have been obvious to one of ordinary skill in the art at the time of the invention because such would have provided predictable results.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TUROCY whose telephone number is (571)272-2940. The examiner can normally be reached on Monday, Wednesday and Friday from 7 a.m. - 6 p.m., Tuesday and Thursdays 7-10 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/552,307  
Art Unit: 1792

Page 11

/David Turocy/  
Primary Examiner, Art Unit 1792